MAYEVSKAYA, S. P.

MAYEVSKAYA, S. P. -- "The Crop Yield of Cotton as a Function of the Conditions of Nutrition in the Initial Period of Development of the Plant." Min Higher Education USSR. Belotserkov' Agricultural Inst. Kherson, 1955.
(Dissertation for the Degree of Candidate in Agricultural Sciences).

SO: Knizhnaya Letopis', No 9, 1956

RUKHMAN, L.Ye.; RAZEVSKAYA, T.P.; KHAPMAN, V.L.

Insertion appliances of polyethylene in foot defects. Ortop., travm. i protez. no.1:77-80'63. (MIRA 16:10)

1. Iz detskoy kliniki (zav. - doktor med. nauk L.Ye. Rukhman) Leningradskogo instituta protezirovaniya (dir. - dotsent M.V. Strukov).

L 41187-66 EWT(m)/T/EWP(v)/EWP(j) IJP(c) WW/RM/JWD

ACC NR: AP6023431 SOURCE CODE: UR/0190/66/008/007/1247/1251

AUTHOR: Korenevskaya, N. S.; Lavrent'yev, V. V.; Yagnyatinskaya, S. M.; Rayevskiy, V. G.; Voyutskiy, S. S.

ORG: 2nd Moscow State Medical Institute (2-y Moskovskiy gosudarstvennyy meditsinskiy institut); Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Effect of degree of contact on the strength of adhesive bonds between an elastomer and a solid substrate

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 7, 1966, 1247-1251

TOPIC TAGS: elastomer, adhesive bonding

ABSTRACT: An optical method was used to study the effect of the conditions under which elastomer - solid substrate and elastomer - elastomer adhesive bonds are formed on the strength of the bonds and the degree of the contact between adhesive and substrate. The adhesive employed was SKN-40 butadiene-acrylonitrile copolymer, and the substrate was a polished part of a paste prepared from a mixture of channel-black powder and polyvinyl alcohol binder. The optical instrument used for determining the area of actual contact is described. The effect of pressure and duration of the contact on the extent of the adhesive - substrate contact was determined. It is shown that in both types of adhesive bonds studied, the increase of adhesive strength with

Card 1/2 UDC: 678.01.53

ACC NR: AT6023431

the observation time continues even after the equilibrium value of the degree of contact has been established. It is postulated that the discrepancies observed between the course of the kinetic relationships and the strength of the self-adhesive elastomer - elastomer bond is due to volume diffusion processes, and in the case of the adhesive elastomer - solid substrate bond, to microrheological processes and surface diffusion. Authors thank V. F. Mal'tsev for carrying out a part of the work at the colloid chemistry department of MITKhT im. M. V. Lomonosov. Orig. art. has: 5 figures.

SUB CODE: 11/ SUBM DATE: 23Jun65/ ORIG REF: 007/ OTH REF: 001

Card 2/2

L 4[illegible]-66 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AR6024953 (A) SOURCE CODE: UR/0081/66/000/006/N003/N003

AUTHOR: Kovrizhko, L. F.; Bryantseva, Yu. V.; Rayevskaya, V. I.; Agarkova, T. P.

TITLE: Isolation of trans-piperylene from the piperylene fraction obtained in the production of synthetic rubber 16

SOURCE: Ref. zh. Khimiya, Part II, Abs. 6N17

REF SOURCE: Tr. Labor. khimii vysokomolekul. soyedineniy. Voronezhsk. un-t, vyp. 3, 1964, 78-82

TOPIC TAGS: piperylene, synthetic rubber, hydrocarbon

ABSTRACT: The conditions for the isolation of trans-piperylene (I = piperylene) from the piperylene fraction obtained in the production of synthetic rubber were determined. The isolation of trans-I from a mixture containing (in wt. %) 0.00-0.07 butylenes, 8.01-24.91 amylenes, 1.00-2.50 ethyl ether, 3.03-6.58 isoprene, 42.98-64.03 trans-I, 17.2-36.77 cis-I, 0.17-0.59 cyclopentadiene, 0.22-1.12 C6 hydrocarbons was achieved by fractionating and isomerizing the cis-I present. Ethyl ether is first removed from the piperylene fraction by washing repeatedly with water, then cyclopentadiene is removed by treatment with a 27% solution of maleic acid at a 1:1 ratio of I to maleic acid for 30 min at 30-40°. The purified fraction is dried for 24 hr over active Al_2O_3, and fractionated on a column of 20 theoretical plates with a reflux ratio of 40-45; the fraction with b. p. 41-43° is removed. After a second fractional distillation of

Card 1/2

L 42870-00

ACC NR: AR6024953

this fraction on a column with 66 theoretical plates and a reflux ratio of 70-80, a fraction with b. p. 41.5-42.3 containing 97-99% trans-I is removed in 60-64% yield. Cis-I, whose content in the bottoms after the first and second rectification amounts to ~80%, is isomerized to trans-I in the presence of crystalline iodine (36.8 g of iodine per 500 g of bottoms), which is added in portions for 20-30 min. The mixture is kept for 24 hr at 20°C and distilled on a fractionating column of 60 theoretical plates and a reflux ratio of 60-70; the fraction with b. p. 41.5-42.3°, containing 99-99.9% trans-I, 0.4-0.08% amylenes, and traces of cyclopentadiene, is removed. The trans-I obtained is used as a copolymer for the synthesis of 1,4-cis-polybutadienepiperylene rubber. A. Grigor'yev. [Translation of abstract]

SUB CODE: 07

NESTERKHINA, Ye.N.; BLAZHEVICH, V.A.; STALINOVA, M.A.; RAYEVSKAYA, V.I.; BRODSKIY, G.S.; RABINOVICH, A.B.

Use of plastics in the sealing off of the flow of stratial waters in oil wells. Plast. massy no.8:36-40 '64.
(MIRA 17:12)

SHIPEROVICH, V.Ya.; YAKOVLEV, B.P.; RAYEVSKAYA, V.S., red.; SHEVCHENKO, L.V., tekhn.red.

[Methods of determining the quality of seeds in spruce cones injured by insects and fungi] Metody opredeleniia godnosti elovykh shishek, povrezhdennykh nasekomymi i gribami. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1960. 15 p.
(Spruce--Diseases and pests) (MIRA 14:1)

SKOROPANOV, S.G., red.; DADYKIN, V.P., doktor biol. nauk, red.; LEBEDEVA, N.V., kand. bil. nauk, red.; RAYEVSKAYA, V.S., red.; SALO, I.V., red.; SHCHEMELEVA, A.V., red.; GREYVER, I.K., tekhn. red.

[Improvement of farm and forest lands in northwestern U.S.S.R.] Melioratsiia sel'skokhoziaistvennykh i lesnykh ugodii Severo-Zapada SSSR; materialy konferentsii. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1962. 253 p. (MIRA 15:6)

1. Nauchno-tekhnicheskaya konferentsiya po voprosam osusheniya i osvoyeniya bolot i zabolochennykh zemel' Karelii, Petrozavodsk, 1961. 2. Chlen-korrespondent Akademii nauk Belorusskoy SSR, Ministerstvo sel'skogo khozyaystva Belorusskoy SSR (for Skoropanov). (Russia, Northwestern--Soils)

NOVROTSKAYA, V.S.; RAYEVSKAYA, V.S.; RAYEVSKIY, A.N.

Peculiarities of wind regime over irrigated fields in the southern Ukraine. Meteor. i gidrol. no.8:35-38 Ag '57. (MLRA 10:8)
(Ukraine--Winds)

RAYEVSKAYA, V.V.

Exchange blood transfusion in patients with serious poisoning by hypnotics and the diagnostic importance of Flanden's test. Trudy inst. im. N.V. Sklif. 5 no.2:191-196 '62. (MIRA 18:6)

YEREMIN, Yu.G.; LAVROVA, L.A.; RAYEVSKAYA, V.V.; ROMANOV, P.N.

Use of organic reagents for determining microimpurities in metals and alloys. Prom.khim.reak. i osobo chist.veshch. no.3: 22-48 '62. (MIRA 17:4)

YEREMIN, Yu.G.; LAVROVA, L.A.; RAYEVSKAYA, V.V.; ROMANOV, P.N.

Current methods for determining small quantities of cerium. Zav.lab. 30 no.12:1427-1433 '64. (MIRA 18:1)

CHAZOV, Ye.I.; ANDREYENKO, G.V.; SPEKTOROVA, Z.G.; RAYEVSKAYA, V.V.; MOISEYEV, S.G.; BABSKIY, Ye.B.; BREDIKIS, Yu.I.; KUSHKIY,R.O.; KALITEYEVSKAYA, V.F.; BEREZOV, Ye.; POKROVSKIY, A.V.; MEL'NIK, I.Z.; AGRANENKO, V.A.; VINOGRADOVA, I.L.; SKACHILOVA, N.N.; VIKHERT, A.M.; ZAMYSLOVA, K.N., prof.; SOKOLOVSKIY, V.P.,prof.; BEYUL, Ye.A., kand.med.nauk; SOLOV'YEV, V.V.

Minutes of the meetings of the Moscow Society of Therapeutists. Terap.arkh. 35 no.1:112-118 Ja'63. (MIRA 16:9)
(THERAPEUTICS--ABSTRACTS)

ACC NR: AP7005537 SOURCE CODE: UR/0075/66/021/011/1303/1306

AUTHOR: Yeremin, Yu. G.; Rayevskaya, V. V.; Romanov, P. N.

ORG: Polytechnic Institute, Volgograd (Politechnichskiy institut); All-Union Scientific Research Design Institute of Technology of Chemical and Petroleum Machinery, Volgograd (Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut tekhnologii khimicheskogo i neftyanogo apparatostroyeniya)

TITLE: The use of tributyl phosphate for the extraction of microamounts of cerium in the analysis of steels

SOURCE: Zhurnal analiticheskoy khimii, v. 21, no. 11, 1966, 1303-1306

TOPIC TAGS: cerium, cerium analysis, metal analysis, tributyl phosphate, extraction photometric method

ABSTRACT: A method for determining down to 0.005% of cerium in alloy steels is presented. Cerium is separated by extraction with tributyl phosphate and coprecipitated as oxalate on a lanthanum or calcium collector. Cerium is then determined by an extraction-photometric method by means of methylene blue. The

 UDC: 543.70

ACC NR: AP7005537

relative experimental error of the determinations is 2—6%. Orig. art. has: 1 diagram, and 2 tables. [Authors' abstract] [KP]

SUB CODE: 11,07/SUBM DATE: 18Jan65/ORIG REF: 003/OTH REF: 001/

Card 2/2

RAYEVSKAYA, Ye.A., inzh.

Engine room ventilation on passenger motorships "Moldavia" and "Kolkhida." Sudostroenie 30 no.1:11-13 Ja '64. (MIRA 17:3)

RAYEVSKAYA, YE. A.

Rayevskaya, Ye. A.

"The Bearing Capacity of I-Beams under Simultaneous Bending and Twisting." Min Higher Education USSR. Moscow Order of Labor Red Banner Construction Engineering Inst imeni V. V. Kuybyshev. Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Science)

So: Knizhnaya letopis', No. 27, 2 July 1955

MAL'MGREN, E.; RAYEVSKAYA, Ye.; SHEKHTER, I.Yu., red.; GAUS, A.L., izdat.red.; NATAPOV, M., tekhn.red.

[Collection of exercises in translating German scientific and technical literature] Sbornik uprazhnenii po perevodu nemetskoi nauchno-tekhnicheskoi literatury. Izd.2. Moskva, Izd-vo lit-ry na inostr.iazykakh, 1959. 189 p.
(MIRA 12:7)

(German language--Translating)
(Science--Translating)

KAYLVSKAYA, Ye.A.; KOTOV, I.I., doktor tekhn. nauk, prof., retsenzent; TUCHKEVICH, L.K., inzh., red.

[Mechanical drawing of spatial angles] Inzhenernaia grafika prostranstvennykh uglov. Moskva, Izd-vo "Mashinostroenie," 1964. 210 p. (MIRA 17:8)

RAYEVSKAYA, Ye.A. (Moscow)

Limited balance method of calculating compressed torsion beyond the limit of elasticity in cantilever I beams. Inzh. sbor. 20:93-100 '54.
(Girders) (Torsion) (MLRA 8:7)

RAYEVSKAYA, Ye.A., inzh.

Increasing the efficiency of marine ventilation and air conditioning systems. Sudostroenie 28 no.11:19-23 N '62. (MIRA 15:12)
(Ships--Heating and ventilation)

SOV/124-58-2-2142

Translation from: Referativnyy zhurnal, Mekhanika, 1958. Nr 2, p 91 (USSR)

AUTHOR: Rayevskaya, Ye. A.

TITLE: ~~Theoretical Estimation~~ of the Bearing Capacity of H Beams Under Simultaneous Bending and Torsion (Teoreticheskaya otsenka nesushchey sposobnosti dvutavrovykh balok pri odnovremennom izgibe i kruchenii)

PERIODICAL: V sb.: Issledovaniya po teorii sooruzheniy. Nr 7. Gosstroyizdat, 1957, pp 269-298

ABSTRACT: The author conducts an investigation of a cantilever steel H beam subjected to bending and torsion and seeks to determine the limiting state loading therefor. The problem is solved by the limit-analysis method. The yield condition is assumed according to the energy theory method. The author examines the static aspect of the problem and, by using the equations of equilibrium for the undeformed state, obtains equations which can serve to provide both outside and inside estimates of the bearing capacity of the beam. In the first instance the author utilizes the "softened" conditions of plasticity

Card 1/2

Theoretical Estimation of the Bearing Capacity of H Beams (cont.)

$$|\sigma| \leq \sigma_T, \qquad |\tau| \leq \tau_T = \sigma_T / \sqrt{3}$$

whereas in the second instance he employs the condition of plasticity in the form

$$\sigma^2 + 3\tau^2 = \sigma_T^2$$

The examination is extended to various loading conditions of the beam, including constrained torsion, free torsion and pure bending, constrained torsion and pure bending, transverse bending and constrained torsion.

Reviewer's name not given

Card 2/2

RAYEVSKAYA, Ye.A., inzh.

Comparative analysis of a ship's air-distributing arrangements. Sudostroenie 29 no.2:12-17 F '63. (MIRA 16:2)
(Ships—Heating and ventilation)

RAYEVSKIY, Ye.A., inzh.

Efficient ventilation of ship kitchens. Sudostroenie 27 no.4:22-25 Ap '61. (MIRA 14:3)
(Ships--Heating and ventilation)

AFANAS'YEV, Konstantin Arkad'yevich, inzh.; GRECHIN, Modest Alekseyevich, inzh.; KORCHAGIN, Mikhail Ivanovich, kand.tekhn.nauk; LOGINOV, Sergey Petrovich, kand.ekon.nauk; MIROSHNICHENKO, Il'ya Petrovich, kand.tekhn.nauk; RAPOPORT, Leonid Il'ich, kand.tekhn.nauk; SYROMYATNIKOV, Viktor Fedorovich, kand.tekhn.nauk. Prinimali uchastiye: RAYEVSKAYA, Ye.A., inzh.; GRIGOR'YEV, Ya.I., inzh. STRUMPE, P.I., red.; MARCHUKOVA, M.G., red.izd-va; LAVRENOVA, N.B., tekhn.red.

[Modernization of seagoing cargo vessels] Modernizatsiia morskikh transportnykh sudov. Pod obshchei red. P.I.Strumpe. Moskva, Izd-vo "Morskoi transport," 1960. 306 p.

(MIRA 14:1)

(Freighters--Equipment and supplies)

RAYEVSKAYA, Ye.A., inzh. (Moskva)

Theoretical evaluation of the supporting capacity of I-beams subjected to bending combined with torsion. Issl. po teor. sooruzh. no.7:269-298 '57. (MLRA 10:9)

(Girders)

OKHOTIN, M.V., doktor khim. nauk; RAYEVSKAYA, Ye.I., inzh.;
TUZIKOV, A.I., inzh.

Automatic diagram for measuring the electric conductivity of molten glass. Stek. i ker. 22 no.11:7-9 N '65.
(MIRA 18:11)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut stekla (for Okhotin, Rayevskaya). 2. Proyektno-konstruktorskoye byuro Gosudarstvennogo nauchno-issledovatel'skogo instituta stekla (for Tuzikov).

4.

7.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

1. [illegible], Ya. S.

2. USSR (600)

4. Electric Driving

7. Problem of electric drive for piston compressors. Energ. biul. No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

FRANKFURT, Ya.L.; RAYEVSKAYA, Ye.S.

Limits of the compensating capacity of a synchronous motor driving a mechanism with intermittent load. Energ.biul. no.12:18-22 D '53.
(MLRA 6:11)
(Electric motors, Synchronous)

RAYEVSKAYA, M.N.

Investigating the structure of new deformable hard magnetic alloys. Izv. AN SSSR. Ser. fiz. 23 no.3:266-270 Mr '59. (MIRA 12:5)

(Alloys--Magnetic properties)

J

Country : USSR
Category: Soil Science Mineral Fertilizers

Abs Jour: RZhBiol. No 14, 1958, No 63066

Author : Rayevskaya, E S.
Inst : Ukranian Scientific-Research Institute for Irrigation Farming
Title : The Effectiveness of Fertilizers When Applied Simultaneously with the Cultivation of the Soil

Orig Pub: Byul nauchno-tekhn. inform. Ukr n -i in-t oroshayemogo zemledel , 1957, No 3, 21-24

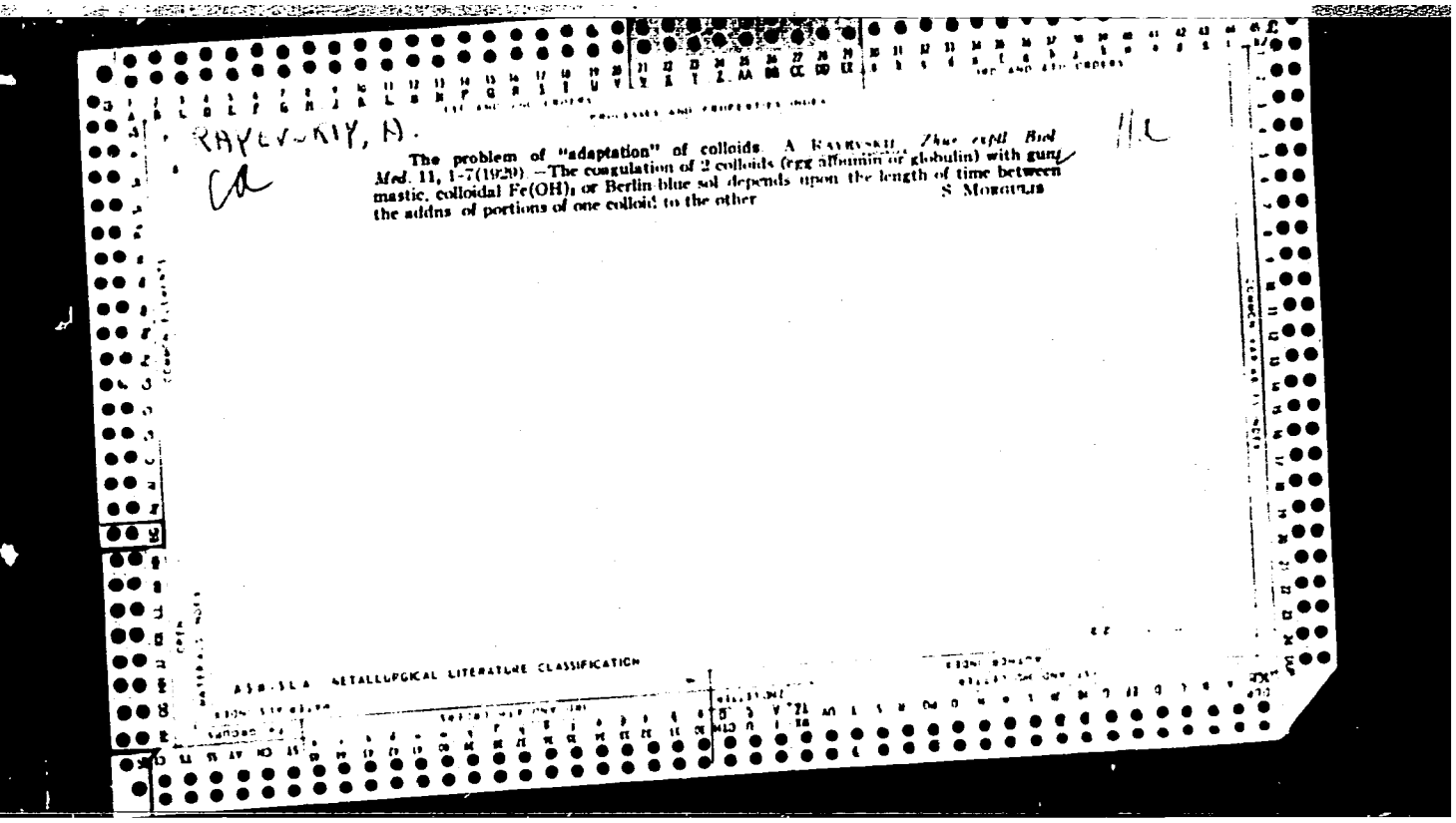
Abstract: According to results of field experiments by the Ukraine Scientific-Research Institute for Irrigation Farming, under conditions of the south of the republic, the local application in rows and holes of fertilizers makes possible a decrease in the

Card : 1/2

RAYEVSKIY, A.

Increase the role of legal advisers in the struglle against embezzlement and theft. Prom.koop.no.11:32-33 N '56. (MLRA 9:12)

1. Starshiy yuriskonsul't gorpromsoveta, Leningrad.
(Larceny)



RAYEV-KIY, N.

CA

The problem of "adaptation" of colloids. A. Rayevskii. *Zhur. exptl. Biol. Med.* 11, 1-7(1930).—The coagulation of 2 colloids (egg albumin or globulin) with gum mastic, colloidal $Fe(OH)_3$ or Berlin blue sol depends upon the length of time between the addns of portions of one colloid to the other. S. Morgulis

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

RAYEVSKIY, A.A., inzh.-konstruktor.

Redesign of a paper machine. Bum. prom. 32 no.12:26 D '57. (MIRA 11:1)

1. Kartonnaya fabrika "Proletariy."
(Papermaking machinery)

RAYEVSKIY, A.A.

Cylindrical dryers for sheet cardboard. Bum. prom. 33 no. 6:24 Je '58. (MIRA 11:7)

1. Inzhener-konstruktor kartonnoy fabriki "Proletariy."
(Paperboard)
(Drying apparatus)

RAYEVSKIY, A.A., inzhener-konstruktor.

Improving the drive of a wet beater. Bum. prom. 32 no.5:24 My '57. (MLRA 10:6)

1. Kartonnaya fabrika "Proletariy".
(Papermaking machinery--Electric driving)

[illegible], [illegible] and [illegible], [illegible] A.

"Influenza in Cattle -- A Disease Simulating Foot-and-Mouth Disease". *Veterinariya*, 19[illegible], No. 2.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001444410005-8"

S/138/60/000/002/002/009
A051/A029

AUTHORS: Mikhant'yev, B.I., Rayevskiy, A.B.

TITLE: The Inhibition of ω-Polymerization

PERIODICAL: Kauchuk i Rezina, 1960, No. 2, pp. 3 - 6

TEXT: The nature of ω-polymerization is little known. The divinyl styrene ω-polymer, which is formed in the production of rubber by the emulsion method, is harmful, since it clogs the apparatus and causes a breakdown in the equipment. It is stressed, therefore, that the development of a method for the prevention of ω-polymer formation is of great practical significance. The authors used sulfur, polysulfide of sodium, n-oxydiphenylamine, quinone, hydroquinone and isopropyl benzene hydroperoxide as inhibitors. It was found that hydroquinone inhibits ω-polymerization 2 to 4 times as effectively as quinone. Elemental sulfur in a 0.05% dosage increases the induction period of the ω-polymerization by a factor of 2. An aqueous solution of polysulfide of sodium, after dilution or processing with air, is a good inhibitor of ω-polymerization. N-oxydiphenylamine inhibits ω-polymerization well. The induction period increases 8 times with

The Inhibition of ω-Polymerization

a dosage of 0.01% of the latter. Since the porous polymer is formed in the production apparatus in the presence of water or perhaps oxygen, the experiment was directed at a study of the inhibitors in the presence of these latter components. The authors previously pointed out in Reference 4, that oxygen increases the induction period of the ω-polymerization considerably. In the present work the behavior of oxygen introduced into the system at the end of the induction period was also investigated and it was noted that it does not inhibit the ω-polymerization in this case. As a result of the experiments the authors conclude that sulfur, sodium polysulfide and n-oxydiphenylamine can be recommended for use as inhibitors of ω-polymerization in industry. There are 6 figures, 3 tables and 4 references: 2 Soviet and 2 English.

ASSOCIATION: Voronezhskiy Gosudarstvennyy universitet i Voronezhskiy zavod sinteticheskogo kauchuka im. S.M.Kirova (Voronezh State University and Voronezh Synthetic Rubber Plant imeni S.M. Kirov)

L 43093-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM S/0081/65/000/001/S015/S015
ACCESSION NR: AR5006830

SOURCE: Ref. zh. Khimiya, Abs. 1S84

AUTHOR: Kovrizkho, L.F.; Rayevskiy, A.B.; Serbulova, Z.A.

TITLE: Inhibition of Omega-polymerization by aromatic compounds

CITED SOURCE: Tr. Labor. khimii vysokomolekul. soyedineniy. Voronezhsk. un-t, vyp. 2, 1963, 68-71

TOPIC TAGS: Omega polymer, Omega polymerization, nitrobenzene, aminophenol, divinylstyrene polymerization, nitrophenol, nitrogen oxide

TRANSLATION: As inhibitors of the ω-polymerization of divinylstyrene, the authors used nitrobenzene, m-dinitrobenzene, p-dinitrobenzene, m-nitrophenol, 4-nitro-2-aminophenol, o-aminophenol, p-aminophenol and 4-chloro-2-aminophenol. ω-Polymerization was carried out in ampoules at 50C. The nitro compounds tested all increased the induction period and decreased the rate of polymerization; the aminophenols also increased the induction period but had no effect on the rate of ω-polymerization. Treatment of primers of ω-polymer with N-oxides at approximately 20C did not lead to complete deactivation.

A. Chernikhov

Card 1/1

RAYEVSKIY, A.B.; SHATALOV, V.P.

Inhibition of the process of styrene polymerization. Kauch.i rez. 19 no.4:9-11 Ap '60. (MIRA 13:12)

1. Voronezhskiy zavod sinteticheskogo kauchuka imeni S.M.Kirova. (Styrene)

26288
S/190/61/003/008/001/019
B110/B220

15.8100

AUTHORS: Rayevskiy, A. B., Kryuchkova, V. G., Zavgorodniy, S. V.

TITLE: Effect of alkyl halophenols on the polymerization of styrene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 8, 1961, 1121-1124

TEXT: The inhibiting effect of phenol derivatives on the polymerization of styrene and its dependence on the structure of the phenol derivatives were studied. The compounds mentioned in the legend of the figure were synthesized to this end. Anisole halides were alkylated by olefins in the presence of $BF_3 \cdot H_3PO_4$ and $BF_3 \cdot O(C_2H_5)_2$ at 60°C. Demethylation of the anisole alkyl halides obtained was performed in the presence of HI, HBr, and acetic anhydride. Commercial styrene was purified from hydroquinone by treatment with 20% KOH, dried over Al_2O_3 and distilled in a nitrogen flow. The molar ratio of styrene to inhibitor was $5 \cdot 10^3 : 1$. For comparison, styrene was polymerized without inhibitor. The polymer content P was calculated from the refractive index: $P = (2.05 \cdot n_D^{20} - 3.17) \cdot 10^3$. Results: 1) The nature

Card 1/4

Effect of alkyl halophenols on ...

of the halogens and their position influences the inhibiting effect; 2) 2-alkyl-4-halophenols are stronger inhibitors than 2-halogen-4-alkyl phenols; 3) fluorine derivatives are stronger inhibitors than chlorine derivatives; 4) 4-fluorophenols show an increasing inhibiting effect in the sequence: 2-sec-butyl-; 2-cyclohexyl-; 2-sec-amyl-; 2-isopropyl-4-fluorophenol; 5) the inhibiting effect of 4-chlorine derivatives increases conversely; 6) the nature of the alkyl radical has no essential effect in the case of 4-alkyl-2-halophenols; 7) Since phenol derivatives have an inhibiting effect only in the presence of O_2, the compounds studied did not show such an effect in the polymerization of styrene in a nitrogen atmosphere. There are 1 figure, 2 tables, and 7 references: 3 Soviet and 4 non-Soviet. The most important references to English-language publications read as follows: Ref. 1: E. G. Edwards, G. F. P. Harris, Chem. Ind., 1955, 625; Ref. 2: S. G. Food, J. chem. Soc., 1940, 48. Ref. 6: USA Patent 2, 221 809, 1940.

ASSOCIATION: Zavod sinteticheskogo kauchuka im. S. M. Kirova (Synthetic Rubber Works imeni S. M. Kirov). Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

RAYEVSKIY, A.B.; KRYUCHKOVA, V.G.; ZAVGORODNIY, S.V.

Effect of alkylhalodiphenols on the polymerization of styrene. Vysokom.soed. 3 no.8:1121-1124 Ag '61. (MIRA 14:9)

1. Zavod sinteticheskogo kauchuka imeni S.M.Kirova i Voronezhskiy gosudarstvennyy universitet.
(Phenol) (Styrene) (Polymerization)

GERMAN, E.D.; RAYEVSKIY, A.B.; LEZHENIN, V.M.

Inhibition of emulsion polymerization. Vysokom. soed. 5 no.10:1496-1498 O '63. (MIRA 17:1)

1. Voronezhskiy filial nauchno-issledovatel'skogo instituta sinteticheskogo kauchuka imeni S.V. Lebedeva.

83836

S/138/60/000/004/002/008
A051/A029

15.9201 1234 2209 1153

AUTHORS: Rayevskiy, A.B., Shatalov, V.P.

TITLE: The Inhibition of the Polymerization Process of Styrene

PERIODICAL: Kauchuk i Rezina, 1960, No. 4, pp. 9 - 11

TEXT: The self-induced polymerization in styrene and its inhibition by sulfur was studied earlier (Refs. 1 - 4). Compounds with a quinoid structure were also found to have inhibiting properties (Ref. 5). Although several compounds are known with inhibiting effects on the polymerization of styrene, which are used in industry, these have, however, a short live span. Therefore, the purpose of the article was to evaluate the inhibiting properties of the known products and to discover new substances more effective in the inhibition of polymerization and to select the most suitable inhibitor for distillation of the recovered styrene in the production of butadiene-styrene rubbers. The experimental procedure is outlined and a table of comparison is submitted of the different inhibitors tested at 100°C. It was found that sulfur is surpassed only by n-nitrosodimethylaniline. However,

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S/138/60/000/004/002/008
A051/A029

The Inhibition of the Polymerization Process of Styrene

sulfur was used in production experiments as a more readily available material and was highly effective. According to decreasing activity on the polymerization of styrene, the substances tested line up in the following sequence: n-nitrosodimethylaniline > sulfur > pulp-resin antipolymerizer > quinone > hydroquinone > n-oxydiphenylamine > o-nitrophenol and > 4-nitropyridine-N--oxide. Sulfur as an inhibitor during the production distillation process of styrene instead of pulp-resin antipolymerizer increases the column's run and decreases the losses of styrene. There are 2 figures and 9 references: 7 Soviet and 2 English.

ASSOCIATION: Voronezhskiy zavod sinteticheskogo kauchuka im. S.M. Kirova (Voronezh Plant of Synthetic Rubber imeni S.M. Kirov)

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S/138/59/000/010/005/010
A051/A029

AUTHORS: Mikhant'yev, B.I.; Rayevskiy, A.B.

TITLE: The Divinyl-Styrene ω-Polymer

PERIODICAL: Kauchuk i Rezina, 1959, No. 10, pp. 24 - 27

TEXT: The mechanism of ω-polymerization was studied. In this connection the initiating stage is of particular interest. The reaction mechanism was investigated at various ratios of divinyl to styrene in the absence of peroxides or triggers and at various temperatures. The effect of different amounts of hydrogen peroxide and elementary oxygen on the ω-polymerization was also studied. The experimental procedure is outlined in detail and the results of the investigation are discussed. By making a comparative study of the ω-polymerization rate with and without trigger (Fig. 1), it was seen that the reaction in both cases takes several hours, whereas the difference in the induction period is 240 hours. It is concluded that the extent of the induction period depends mostly on the processes which lead to the formation of the ω-polymer nucleus. As soon as the nucleus appears in the system, the rate of the reaction progressively increases and shortly after it almost all the monomers are converted to the ω-polymer. ω-poly-

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The Divinyl-Styrene ω-Polymer

mers are formed simultaneously in the system, which can be seen from the increase in viscosity and by the presence of benzene-soluble products in the ω-polymer. In the experiments with triggers the induction period can be explained by the effect of traces of oxygen, namely, if the polymerization is conducted in an atmosphere of elementary oxygen the induction period becomes twice as long. The temperature coefficient of the reaction rate was computed from the difference of these rates at temperatures of 30, 50 and 70°C. The formula

$$\gamma = \sqrt{\frac{V_1}{V_2}}$$

is derived, where γ is the temperature coefficient of the reaction rate, and V_1, V_2 are the rates of polymerization. Several conclusions could be drawn from the experimental results: 1) The optimum ratio of divinyl to styrene for the ω-polymerization at 50°C in the absence of a trigger was found to be 0.17 mole/mole. 2) The temperature coefficient of the ω-polymerization rate in the presence of a trigger was found to be 1.70. 3) Molecular oxygen increases the induction period of the ω-polymerization by a factor of two, without affecting the rate. 4) Isopropylbenzene hydrogen peroxide, at 0.1 weight % quantity, does not noticeably affect the ω-polymerization. With a further increase in the concentration, the rate of polymerization decreases. There are 5 graphs, 2 tables and 14 references: 6

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S/138/59/000/010/005/010

The Divinyl-Styrene ω-Polymer

Soviet, 6 English and 2 German.

ASSOCIATION: Voronezhskiy zavod sinteticheskogo kauchuka (Voronezh Plant of Synthetic Rubber)

Card 3/3

BERNATSKIY, N.A., inzh.; RAYEVSKIY, A.D., inzh.

Cargo transportation on platforms. Rech. transp. 17 no.2:32 F '58. (MIRA 11:2)
(Loading and unloading)

L 10183-66 EWT(m)/EWP(j)/T RPL WW/RM

ACC NR: AP5028492 SOURCE CODE: UR/0286/65/000/020/0066/0067

AUTHORS: Angert, L. G.; Kuz'minskiy, A. S.; Kovrizhko, L. F.; Piotrovskiy, K. B.; Rayevskiy, A. B.; Sotnikov, I. F.; Ivanova, Z. V.

ORG: none

TITLE: Method for obtaining synthetic rubber. Class 39, No. 175659 [announced by Voronezh Factory for Synthetic Rubber im. S. M. Kirova (Voronezhskiy zavod sinteticheskogo kauchuka)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 66-67

TOPIC TAGS: rubber, synthetic rubber, polymer, copolymer styrene, butadiene

ABSTRACT: This Author Certificate presents a method for obtaining synthetic rubber via an aquo-emulsion copolymerization of butadiene with styrene or α-methyl styrene in the presence of known emulsifiers, initiators, regulators, and buffers and with the use of polymerization terminators. The latter are introduced into the system after obtaining the desired degree of monomer conversion. To increase the variety of polymerization terminators, oxyneozone is used as polymerization terminator. The polymerization process may also be terminated by using oxyneozone along with known polymerization terminators, e.g., sodium dimethyldithiocarbamate.

SUB CODE: 11/ SUBM DATE: 14Jul64

Card 1/1 UDC: 678.762.2—134.622

AKIMOVICH, N.N.; RAYEVSKIY, A.N.

Microclimatic features of the resort of Yevpatoriya. Trudy OGMI no.28:27-31 '62. (MIRA 16:6)
(Yevpatoriya--Climate)

RAYEVSKIY, A.N. , Cand Tech Sci -- (diss) " Stability of [illegible]-tier multi-span frames." Len, 1958, 20 pp (Min of Higher Education USSR. Len Order of Labor Red Banner Engineering Construction Inst) 110 copies (KL, 2 -58, 132-)

RAYEVSKIY, A.N., kand.tekhn.nauk

Determining stability of flat frames with latticed cross bars.
Sbor. nauch. trud. LISI no.3:88-104 '59. (MIRA 13:7)
(Structural frames)

RAYEVSKIY, A.N., kand.tekhn.nauk

Calculating the stability of certain elastic frame systems. Sbor. nauch. trud. LISI no.3:127-152 '59. (MIRA 13:7)
(Structural frames)

RAYEVSKIY, A.N. (Penza)

Determining frequencies of free horizontal vibrations in one-story multispan frames. Stroi. mekh. i rasch. soor. 2 no.6:29-34 '60.
(MIRA 13:12)
(Structural frames—Vibration)

RAYEVSKIY, Aleksey Nikolayevich; LOBIKOV, A.S., dotsent, kand. tekhn. nauk, retsenzent; BEZUKHOV, N.I., prof., doktor tekhn. nauk, retsenzent; OVSYANNIKOVA, Z.G., red. izd-va; GARINA, T.D., tekhn. red.

[Principles of the design of structures for stability]Osnovy rascheta sooruzhenii na ustoichivost'. Moskva, Vysshaia shkola, 1962. 159 p. (MIRA 15:8)

1. Kafedra stroitel'noy mekhaniki Leningradskogo inzhenerno-stroitel'nogo instituta (for Lobikov).
(Structures, Theory of)

RAYEVSKIY, A.N. (Penza)

Determining the estimated lengths of columns of the frames of multistory industrial buildings. Stroi. mekh. i rasch. soor. 5 no.3:24-30 '63. (MIRA 16:6)

(Structural frames)
(Industrial buildings—Design and construction)

RAYEVSKIY, A.N.

Frequency of atmospheric fronts in the steppe part of the Ukraine.
Trudy UkrNIGMI no.52:24-29 '65. (MIRA 19:1)

PROKHORENKO, M.M.; RAYEVSKIY, A.N.

Rare case of an intensive sheet of glaze in Odessa Province. Trudy Ukr-NIGMI no.52:70-76 '65. (MIRA 18:10)

L 63224-65

ACCESSION NR: AT5017448 UR/2599/65/000/052/0070/0076

AUTHORS: Prokhorenko, M. M.; Rayevskiy, A. N. 55

TITLE: A rare case of intense hail in the Odessa region

SOURCE: Kiyev. Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy, no. 52, 1965. Voprosy klimatologii (Problems in climatology), 70-76

TOPIC TAGS: hail, weather forecasting, anticyclone 12,55

ABSTRACT: This paper is essentially a description of an intense fall of hail in the Odessa region on Feb. 14-15, 1963. Hail stones 50 mm in diameter were observed. No stones exceeding 15 mm had been previously recorded in the Odessa region. Normal electrical service and telephone communications were interrupted, and trees were severely damaged. A dense crust of coalesced hail formed on the ground. The temperature in the middle of the broad anticline was about -20C, and the pressure (100 km south of Gorkiy) was 1025 mb. At 700 to 850 mb, the wind velocity was 30-40 km/hr, but at 500 mb it increased to 70-80 km/hr. A synoptic analysis of the storm is presented in the paper. It is pointed out that the hail was predicted for the Odessa region on Feb. 15, and this is a confirmation of the

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L 63224-65

ACCESSION NR: AT5017448

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validity of the synoptic method. Continuous generation of ice in the atmosphere went on for 20 hours and 20 minutes, and the ice lasted on wires and other objects for 17 hours and 30 minutes longer. February was warmer than usual in the Odessa region (0.9°C warmer for a daily average), and precipitation was 102.2 mm, six times normal. Orig. art. has: 3 figures.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut, Kiyev (Ukrainian Scientific Research Hydrometeorological Institute) 55

SUBMITTED: 00 ENCL: 00 SUB CODE: ES

NO REF SOV: 005 OTHER: 000

dmm

Card 2/2

[redacted]

[redacted] no.43:
[redacted] '64. (MIRA 18:4)

RAYEVSKIY, A.N., kand.tekhn.nauk, dotsent; SHINKARENKO, V.I., inzh.

Method for the design and calculation of a column type apparatus for resistance to seismic action. Khim.mashinostr. no.1:19-21 Ja-F '64. (MIRA 17:4)

RAYEVSKIY, A.N., kand. tekhn. nauk, dotsent

Some problems in determining design lengths of supports (columns) of frame structures. Uch. zap. Penz. inzh.-stroi. inst. no.2: 95-106 '62. (MIRA 17:11)

[redacted], kand. tekhn. nauk, dotsent

Calculating single-stage multispan frames for rigidity by means of consecutive approximations. Uch. zap. Penz. inzh.-stroi. inst. no.4:125-139 '62.

(MIRA 17:11)

RAYEVSKIY, A. N.

Problem of the Frequency of Sleet Meteorol. i gidrologiya, No 1, 1953, pp 28-32

With the data of observations of 128 meteorological stations in part of the European territory of the USSR for 5 years, the author shows the dependence of the number of days with sleet upon the type of relief of the locality. Stations were divided into eight groups according to the degree of shelter of the place from the prevailing wind during sleeting and according to the relative height of the point. (RZhGeol editor's comment: The author does not point out that this procedure was developed for winds by M. Ye. Fodtyagin and S.A. Sapozhnikova.) The author concludes that the frequency of the number of days with sleet depends upon the relative height of the point, relief of the locality, and other factors; the greatest frequency of sleet is noticed in high water-divides, on hill tops, and on windward slopes of great elevation; the lowest frequency is observed in the valleys of rivers protected by mountains. The average frequency of sleet is increased from the first type of relief (bottom of valleys), where sleet is absent, to the eighth type, where sleet is counted up to 30 days a year. (RZhGeol, No 5, 1954)

SO: Sum. No. 568, 6 Jul 55

Odessa Hydrometeorological Inst.

14-57-6-12030

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6, pp 53-54 (USSR)

AUTHOR: Rayevskiy, A. N.

TITLE: A Study of Different Intensities of Sleet Formation (Issledovaniye sluchayev gololedoobrazovaniya razlichnoy intensivnosti)

PERIODICAL: Tr. Odessk. gidrometeorol. in-ta, 1956, Nr (?), pp 107-118

ABSTRACT: The two instances of sleet formation under consideration are synoptically similar, but markedly different in the intensity of precipitation and in the areal distribution. It has been established that the quantity and the extent of sleet distribution is influenced not only by typical processes, but also by the intensity of heat advection, the amount of humidity in the incoming air masses, change of temperature with altitudes

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14-57-6-12030

A Study of Different Intensities (Cont.)

and the type of precipitation. The synoptic processes which cause sleet to be distributed over a wide area, and which cause the intensity of its fall, are characterized by powerful heat advection and by an increase in humidity from 3 to 4 or more grams per kilogram at the altitudes of 1 to 2 km; also at a certain altitude a strong inversion is noted, below which negative temperatures prevail. Positive temperatures at the high boundary of the inversion cause large water drops to form in a cloud; while passing through the subinversion layer of the negative temperatures, these drops freeze and form sleet deposits when they fall on the surface objects.

A. B.

Card 2/2

NOVROTSKAYA, V.S.; RAYEVSKAYA, V.S.; RAYEVSKIY, A.N.

Peculiarities of wind regime over irrigated fields in the southern Ukraine. Meteor. i gidrol. no.8:35-38 Ag '57. (MIRA 10:8)
(Ukraine--Winds)

RAYEVSKIY, A.N.; FOSKARINO, T.G.

Climatological characteristics of diurnal maximums of precipitation in the southern part of the Ukraine. Trudy OGMI no.12:307-337 '58. (MIRA 12:7)

(Ukraine--Precipitation (Meteorology))

SOV/50-59-10-4/25

5(7)

AUTHORS: Rayevskiy, A. N., Kaushanskiy, E. L.

TITLE: Formation of Late Slippery Ice

PERIODICAL: Meteorologiya i gidrologiya, 1959, Nr 10, pp 22 - 24 (USSR)

ABSTRACT: On April 17-18, 1957 formations of thick, oval, slippery ice were found on many sections of the Odessa Railroad Line (Zatish'ye - Mordarovka - Kotovsk - Slobodka). This section was characterized by intense action of cyclones over the central and southern regions of the European part of the Soviet Union, over the Black Sea, and the Eastern Mediterranean. This cyclone action is described here in detail. In a summary the authors point out that in the period of the formation of slippery ice, i.e. during the night from April 17 to 18, temperature rose up to $+2,+3^{\circ}$, and the specific humidity up to 4.4 g/kg, owing to the advection of warm and humid air masses from the South at an altitude of about 1.5 km. An air temperature drop from $+3,+4^{\circ}$ to $-1,-2^{\circ}$ in the cyclone back was observed almost simultaneously over the Ukraine in the troposphere layers near the ground at overcast sky. This temperature drop was due to the cold advection at the southern edge of the anticyclone over the northern half of the

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Formation of Late Slippery Ice SOV/50-59-10-4/25

European part of the Soviet Union. When the air temperature attained -2.9° at the upper inversion limit (altitude: 1620 m), temperature dropped simultaneously by 2-3° in the layer below inversion. As a result, the drops passed through an air layer at a temperature of below zero, fell on objects near the ground, and caused the deposition of atmospheric ice. The article is concluded with a description of the course of this phenomenon from April 17, 19 p.m. to April 18, 10 a.m. There is 1 figure.

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RAYEVSKIY, A.N.

Investigating the case of the intensive rainfall of June 12-13, 1957 in Stanislav Province. Trudy UkrNIGMI no.17:58-62 '59. (MIRA 13:12)

(Stanislav Province--Rain and rainfall)

RAYEVSKIY, A.N.; IVANOVA, I.I.

Characteristics of the formation of glazed frost in Moldavia. Trudy UkrNIGMI no.18:39-51 '59. (MIRA 13:7)

(Moldavia—Ice)

RAYEVSKIY, A.N.

Characteristics of the formation of hoarfrost in Moldavia and its relation to the relief of the locality. Trudy OGMI no.19:41-47 '59. (MIRA 13:5)
(Moldavia--Frost)

PROLKHORENKO, M.M.; RAYEVSKIY, A.N.

A case of intensive glaze formation. Meteor.i gidrol. no.5:27-29 My '61. (MIRA 14:4)
(Odessa Province—Ice)

RAYEVSKIY, A.N.

Relationship between relief and the distribution of glaze-rime accumulations. Trudy OGMI no.23:3-10 '61. (MIRA 16:6)
(Ukraine--Frost) (Land forms)

RAYEVSKIY, A.N.

Synoptic and meteorological conditions causing glaze in the Ukraine. Trudy OGMI no.23:35-44 '61. (MIRA 16:6)
(Ukraine--Frost)

RAYEVSKIY, A.N.

Distribution of glaze over the territory of the Ukraine. Trudy UkrNIGMI no.29:50-62 '61. (MIRA 15:2)
(Ukraine--Ice)

RAYEVSKIY, A.N.

Effect of relief characteristics on the distribution of glazed frost deposits. Trudy GGO no.122:75-80 '61. (MIRA 14:8)
(Ukraine--Ice)

NAYEVSKIY, A.N.

Calculation of glaze by region in the Ukraine. Trudy OGMI no.28: 33-38 '62. (MIRA 16:6)
(Ukraine—Frost)

RAYEVSKIY, A.N.

Distribut[illegible] of lime deposits. Trudy GGO no.142:110-113 '63. (MIRA 16:7)

(Frost)

Rayevskiy, A. N.

124-1957-10-12064

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 122 (USSR)

AUTHORS: Popov, I. G., Rayevskiy, A. N.

TITLE: Determination of the Stability of Some Single-layer Unrestrained Frames (Opredeleniye ustoychivosti nekotorykh odnoyarusnykh svobodnykh ram)

PERIODICAL: V sb.: 15-ya nauch. konferentsiya Leningr. inzh.-stroit. in-ta. Leningrad, 1957, pp 401-404

ABSTRACT: The Authors examine the static stability of multi-span, single-layer, unrestrained frames with unequal linear rigidity of the horizontal beams, as well as single-layer unrestrained frames of the monotonous type with vertical ties in the form of intersecting braces and loads applied at the joints. A method of solution is offered which permits the reduction of the system of uniform canonical equations, set up by the displacement method, to a single equation of the critical state from the determinant of the coefficients of the system, as is done in the general case. For this purpose, the turning angles of the frame joints are determined from the canonical equation as a function of linear displacements and substituted in the equation expressing the equality to

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Determination of the Stability of Some Single-layer (cont.)

zero sum of reactive forces in the supplementary constraint in the joints which prevent the linear displacement of the joints. The equation thus obtained is utilized to determine the critical parameter. The problem is solved by means of successive approximations for given values of the parameter.

A. F. Anishchenko

BASLAVSKIY, I.A., dots., kand. tekhn. nauk; RAYEVSKIY, A.N., aspirant.

Analyzing the coating shaped as a sloping vault for the effect of local cavings. Sbor. nauch trudov LISI no.26:120-135 '57.
(Mining engineering) (MIRA 12:1)

RAYEVSKIY, Aleksandr Nikolayevich [RAEVSKII, A.N.]; MARISOVA, L.I., kand. ped.nauk, otv.red.; SKVIRSKAYA, M.P., red.; KHOKHANOVSKAYA, T.I., tekhred.

[Psychology of speech in Soviet psychological science during the last 40 years, 1917-1957] Psikhologiia rechi v sovetskoi psikhologicheskoi nauke za 40 let (1917-1957). Izd-vo Kievskogo gos. univ. im. T.G. Shevchenko, 1958. 121 p. (MIRA 12:1)
(Speech)

RAYEVSKIY, A.N., kand.tekhn.nauk, dotsent (Penza)

Possibility of replacing a one-story, multiple-span frame with a single-span of equal rigidity. Issl. po teor. sooruzh. no.10:81-89 '61. (MIRA 14:8)

(Structural frames)

RAYEVSKIY, A.M.

Automation of the operation of reservoir pumps. Prom.energ. 16 no.5:22-25 My '61. (MIRA 14:7)
(Pumping machinery, Electric) (Automatic control)

RAYEVS'KIY, A.S.; KHOROLETS', V.I.,

Russian textbooks on biochemistry. Ukr. biokhim. zhur. 27 no.2: 237-241 '55. (MLRA 8:10)

1. Kafedra biokhimii Uzhgorods'kogo derzhavnogo universitetu.
(BIOCHEMISTRY,
textbooks, hist. in Russia)
(BOOKS,
biochemistry textbooks, hist. in Russia)

RAYEVSKIY, A.V.; MANELIS, G.B.; BOLDYREV, V.V.; VOTINOVA, L.A.

Role of dislocations in the thermal decomposition of ammonium perchlorate crystals. Dokl. AN SSSR 160 no.5:1136-1137 F '65. (MIRA 18:2)

1. Institut khimicheskoy fiziki AN SSSR. Submitted August 3, 1964.

L 17853-63 EPF(c)/EWP(q)/EWT(m)/BDS AFFTC/RPL Pr-4 MJW/WW/JD
ACCESSION NR: AP3004430 S/0020/63/151/004/0886/0889

69
66

AUTHOR: Rayevskiy, A. V.; Manelis, G. B.

TITLE: Mechanism of ammonium perchlorate decomposition

SOURCE: AN SSSR. Doklady*, v. 151, no. 4, 1963, 886-889

TOPIC TAGS: ammonium perchlorate, decomposition, thermal decomposition, single crystal, rhombic crystal, cubic crystal, decomposition center, decomposition rate, activation energy, catalyst, decomposition catalyst, carbon film, carbon, thermogravimetric analysis, microphotography, motion-picture microphotography, ammonium perchlorate thermal decomposition

ABSTRACT: Microscopic study and thermogravimetric analysis of ammonium perchlorate single crystals heated at 210—272C have been conducted. The thermal decomposition of ammonium perchlorate was microphotographed with an MKU-1 motion-picture camera. Thermogravimetric microanalysis was employed to record decomposition curves. Two different mechanisms of decomposition, depending upon temperature, were shown to exist. Below 236C decomposition was initiated near the surface of the rhombic crystal. Elongated centers of decomposition were formed by the merging of a multitude of nuclei which previously had been in constant

Card 1/3

motion parallel to the main diagonal of the rhombus. The rate of growth of the centers in a direction parallel to the main diagonal is about 10 times that in a transverse direction. Decomposition centers on the rectangular side of the crystal are semispherical and grow at about the same rate as those in the transverse direction. The activation energy of decomposition is 31—33 kcal/mol in all directions. The decomposition rate increases with an increase in the ratio of rhombic to rectangular face area. Above the transition temperature from the rhombic to cubic phase (238—240C), spherical centers are formed in the entire bulk of the crystal. Decomposition progresses by the growth and merging of these centers. The activation energy in this case is 17 kcal/mol. Spraying a film of carbon catalyst on the surface at 230C contributed to an increase in the growth rate of centers in the transverse direction without changing the mechanism of decomposition. The mechanism is explained in terms of the trapping of electrons in the conduction band of the ionic lattice and the formation of a pair of uncharged particles, $[NH_4^{\cdot}]\cdot[ClO_4^{\cdot}]$, which decomposes rapidly. Nuclei observed below the phase-transition temperature seem to be filled with decomposition products. The report was presented by Academician V. N. Kondrat'yev on 18 April 1962. Orig. art. has: 3 figures and 1 table.

L 17853-63
ACCESSION NR: AP3004430

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 03Apr62 DATE ACQ: 21Aug63 ENCL: 00

SUB CODE: CH, PH NO REF SOV: 001 OTHER: 008

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S/048/59/023/011/001/012
B019/B060

9,4160 (3201,1137)
24.3500 (1035,1138)

AUTHORS: Galanin, M. D., Rayevskiy, A. V.

TITLE: The Temperature-extinction of Luminescence of the Crystal Phosphor ZnS-Ag With Excitation by Light or α-Particles

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol. 23, No. 11, pp. 1280-1282

TEXT: The luminescence of crystal phosphors upon excitation by charged particles differs from photoluminescence; this is simply explained by the difference in the excitation density. In excitation by high-energy particles the mean excitation density can be considerably lower than the local density. A scintillation method is applied here to investigate the temperature-extinction of luminescence of the crystal phosphor Zn-10^{-4}Ag(NaCl), and it is stated in the beginning that this temperature-extinction differs from the processes of "external extinction". The temperature-extinction is assumed to be a radiation-free recombination of localized electrons with free holes. A diagram (Fig. 1) illustrates the temperature-extinction of the abovementioned crystal phosphor upon excitation by α-particles from Po^{210} and by light (λ = 365 mμ) at various excitation intensities. The

dependence of the luminescence intensity I_o (I_o in the absence of extinction) on the excitation intensity E may be approximated with good linearity. Fig. 2 shows the energy scheme of the crystal phosphor, in which connection the absorption of the exciting light is assumed to occur in the band of the activator with extinction being of the first order. This means that the probability of a recombination of localized electrons is greater than that of the capture of holes on the activator. Formula (1) is given for the relative luminescence yield under steady conditions and on the assumption of the number of free electrons and holes being low. The dependence computed according to this formula is graphically illustrated in Fig. 3. Proceeding from a known curve of temperature-extinction at a determined excitation intensity, the above dependence makes it possible to calculate the curves of temperature-extinction at other excitation intensities. The dotted lines in Fig. 1 represent curves calculated in this manner; the comparison with experimental curves yields fairly good results. It is further stated that upon excitation by α-particles, if the capture of a hole on the activator is highly probable, the difference in the absorption mechanism is unimportant. Under these conditions, a comparison is made between the photo- and the α-excitation according to the respective